

Patent
Attorney Docket: CERA/0002

REMARKS

A. Election / Restriction

The provisional election made on April 5, 2004 via telephone to prosecute the invention of Group I, claims 1-15, is hereby affirmed. Claims 16-19 are hereby withdrawn from further consideration in the subject application.

B. Drawings

Figure 1 was objected to because it was said to lack "a legend such as -Prior Art— because only that which is old is illustrated." This objection is respectfully traversed because Figure 1 as filed does indeed include a legend "(*Prior Art*)."¹ The receipt by the Office of this figure, including the noted legend, has been confirmed by inspecting the Office's image file wrapper for the subject application using the private PAIR system. Accordingly, withdrawal of this objection is respectfully requested.

C. Claim Rejections – 35 USC § 112

Claims 12-15 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claims 13-14, which depend from claim 12, were also concluded to be indefinite. Claim 12 has been amended to depend from claim 11, rather than from claim 1, since the step of "adding a wear indicator" is present in claim 11. This amendment is believed to obviate the rejection under Section 112.

D. Claim Amendments

In addition to the amendment to claim 12 mentioned immediately above, claim 1 has been amended such that the recited metal wheel is characterized as being "disk-like." This amendment is clearly supported by embodiments of the measurement wheel shown in Figures 3 and 5, which

Patent
Attorney Docket: CERA/0002

employ relatively thin circular bodies.

E. Allowable Subject Matter

The indication that claims 2-4 and 9-15 contain allowable subject matter is hereby acknowledged with appreciation. For reasons explained below, it is respectfully submitted that the other pending claims (1 and 5-8) are allowable as well.

F. Claim Rejections – 35 USC § 103

Claims 1 and 5-8 stand rejected under 35 U.S.C. 103(a) as being obvious in view of U.S. Patent No. 3,861,012 ("Spaeder") and U.S. Patent No. 4,991,275 ("Adams"). This rejection is respectfully traversed because the Examiner has failed to present a *prima facie* case of obviousness.

To establish a *prima facie* case of obviousness, three basic criteria must be met: 1) there must be some objective suggestion or motivation, either in the prior art reference(s) or in knowledge generally available to one of ordinary skill in the art, to modify to combine reference teachings; 2) there must be a reasonable expectation of success by the resulting combination or modification; and 3) the combined or modified prior art reference(s) must teach or suggest *all the claim limitations* (emphasis added). MPEP § 2143.

Claim 1 defines "[a] method of manufacturing a *measuring wheel* for wireline operations" and includes the step of "machining the perimeter of a disk-like *metal wheel* to achieve a first outer radius" (emphasis added). A "measuring wheel for wireline operations," also known as a "depth wheel," is a calibrated wheel used to drive a depth recording system in wireline logging operations (*Schlumberger Oilfield Glossary*, and *Applicant's Specification*, page 2, last paragraph). Such wheels are pressed against a logging cable (i.e., a wireline) as the cable is spooled onto a drum and therefore turns as the cable is run in and out of the borehole. Small errors in calibration can cause the wheel to introduce systematic errors in the depth recorded. Precise calibration of the radius (or diameter) of a measuring wheel is therefore critical. *Id.*

The thickness or width of such measuring wheels is typically small, resulting in a disk-like shape, since a measuring wheel is intended to provide accurate depth determination of a wireline

Patent
Attorney Docket: CERA/0002

rather than bear significant loads or forces. *See Id.* Accordingly, claim 1 has been amended to reflect this preferred character of the wheel.

Spaeder, however, relates to the manufacturing of a composite roll having application as a work roll for hot-rolling operations, among other things (*Spaeder, at column 1, lines 8-10*). The roll includes a shell 10 and an arbor 12. "Arbor" is used by Spaeder in a manner consistent with the following definition: "a shaft on which a revolving cutting tool is mounted" (*Merriam-Webster Online Dictionary*). Spaeder also describes the arbor component generally, at column 1, lines 14-16 as "a tough core" that functions "to resist shock." Accordingly, the single figure of Spaeder shows an arbor 12 being a flanged, thick-walled tubular member of substantial width. In other words, the arbor of Spaeder is specifically designed to bear the high loads encountered during rolling operations, and is clearly not "disk-like."

Thus, Spaeder fails to teach the above-noted limitation of claim 1. Furthermore, there has been no identification of a teaching in the art that bridges this gap between Spaeder and the claimed invention. Adams is cited for its disclosure of "a roller having a ceramic ring" (*Office Action*, page 5), but Adams also fails to teach or suggest a "disk-like" metal wheel. Adams instead shows, in Figure 2, a cylindrical arbor 31 having a substantial thickness. Accordingly, the rejection of claims 1 and 5-8 on obviousness grounds is not supportable because the third criterion of the *prima facie* case of obviousness is not met. (Note: the absence of specific remarks concerning the first two criteria of the *prima facie* case is not to be construed as an admission that the first two criteria are satisfied.) Reconsideration and withdrawal of the obviousness rejection is therefore respectfully requested.

In conclusion, Applicant submits that all remaining claims in the present application are entitled to allowance and such action is earnestly solicited.

Patent
Attorney Docket: CERA/0002

In the event there are additional charges in connection with the filing of this Response, the Commissioner is hereby authorized to charge the Deposit Account No. 50-0714/CERA/0002 of the firm of the below-signed attorney in the amount of any necessary fee.

Respectfully submitted,



Steven L. Christian
Attorney for Applicant
Registration No. 38,106
STREETS & STEELE
13831 Northwest Freeway, Suite 355
Houston, Texas 77040
(713) 939-9444

Customer No. 24945